

Patent Claims:

1. Mold for manufacturing concrete moldings, having a bottom mold part with at least one mold chamber and having a top mold part with a load plate, and there being  
5 as many dies as mold chambers, characterized in that the bottom die parts (pressure-exerting plates) (5; 5'; 5":48) which come into contact with the concrete are guided so as to be movable in the vertical direction, with respect to the top mold part, in a displacement  
10 range defined by stops (33; 51, 53) and can be forced downwards under the action of a pressure medium.

2. Mold according to Claim 1, characterized in that there is provided on each die a pressure-medium chamber which is activated by a compressed-air source, acts on  
15 the relevant bottom die part and has a movable wall, e.g. a diaphragm (12) or bellows (40).

3. Mold according to Claim 2, characterized in that the dies have die shanks (2; 2") which are fastened on the load plate (1'; 1") and bear movable pressure-exerting  
20 plates (5'; 5"; 47), and in that the pressure-medium chambers are arranged in the bottom region of the dies.

4. Mold according to Claim 2, characterized in that the die shanks (2) are mounted movably on the load plate (1) and are connected firmly to the pressure-exerting  
25 plates (5), and in that the pressure-medium chambers are arranged approximately level with the load plate (1) and exert their compressive forces on the die shanks (2).

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5. Multichamber mold according to Claim 1, characterized in that there is provided on each die a foot  
30 plate (4"), which is connected firmly to the die shank (2"), and there is arranged between said foot plate and the pressure-exerting plate (5") an insert (23; 23') which has a top part with a top plate (24; 24') and a bottom part which is guided so as to be vertically movable with  
35 respect to said top part and has a bottom plate (25; 25'), the top plate being screwed to the foot plate and the bottom plate being screwed to the pressure-exerting plate, and in that the insert (23; 23') contains at least

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one bellows (40), which can be activated by compressed air, and the stops (33, 28 to 31; 46, 51, 53) for delimiting the displacement range of the two parts.

5 6. Mold according to Claim 5, characterized in that interengaging guide bolts (27) and guide sleeves (26) are arranged on the two parts of the insert (23).

10 7. Mold according to Claim 5, characterized in that, as stops for delimiting the displacement of the pressure-exerting plates (5"; 47) upwards, spacer pieces (28 to 31; 46) are provided on one of the two plates (24, 25; 24', 25) of the insert (23; 23').

15 8. Mold according to Claim 5, characterized in that, as stops for delimiting the displacement of the pressure-exerting plates (5") downwards, double-T-shaped stop pieces (33) are provided on one of the plates (24, 25) of the insert (23) and engage in double-T-shaped recesses (32) of spacer pieces fastened on the other plate.

20 9. Mold according to Claim 5, characterized in that a bolt (49, 50) which is fastened on the bottom plate (25') of the insert (23') passes through the other plate (24'), with a guiding action, and has a widened head (53) above said plate and a bearing shoulder (51) beneath the plate.

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25 10. Process for manufacturing concrete moldings by machine using a mold according to <sup>claim 1</sup> ~~one of the preceding claims~~, characterized by the following steps:

- 30 a) The mold chamber(s) is (are) filled with core concrete.
- b) The core concrete is pre-compacted by pressure-medium chamber under pressure.
- 35 c) The top mold part is moved upwards and facing concrete is introduced into the mold chamber(s) as a secondary filling.
- d) All the concrete which has been introduced is subjected to secondary compaction with the pressure of the pressure medium lowered.

11. Process according to Claim 10, characterized in that the pressure is lowered further during the secondary compaction.

12. Process according to Claim 11, characterized in that the pressure is lowered continuously.

13. Process according to Claim 11, characterized in that the pressure is lowered to zero.

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